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Amendments to Claims

Claim 1 (Original).   A method for generating a population of nanoparticles having a narrow size distribution comprising:

    a)   providing a population of stabilized, charged, water-soluble, nanoparticles having a broad size distribution;

    b)   dissolving the stabilized, charged, water-soluble, nanoparticles in an aqueous solution containing an electrolyte;

    c)   adding a substantially water-miscible organic solvent to the dissolved nanoparticles of (b) whereby a certain size fraction of the nanoparticles are precipitated; and

    d)   collecting the nanoparticle precipitate of step (c) having a narrow size distribution.

Claim 2 (Original).   A method according to Claim 1 wherein steps (c) and (d) are optionally repeated at least once to increase the substantially water-miscible organic solvent content of nanoparticle solution and to collect nanoparticle fractions having different narrow size distributions.

Claim 3 (Original).   A method according to Claim 1 wherein the nanoparticles are coated with a monolayer.

Claim 4 (Original).   A method according to Claim 3 wherein the monolayer coating is selected from the group consisting of tiopronin, glutathione, coenzyme A, poly(ethylene glycol), poly(ethylene oxide), and poly(vinyl alcohol).

Claim 5 (Original).   A method according to Claim 1 wherein the nanoparticles are metal nanoparticles

Claim 6 (Original).   A method according to Claim 5 wherein the metal nanoparticles are comprised of metals selected from the group consisting of gold, silver, platinum, palladium, and copper nanoparticles, and alloys thereof.

Claim 7 (Original). ' A method according to Claim 6 wherein the nanoparticles are comprised of gold.

Claim 8 (withdrawn).   A method according to Claim 1 wherein the nanoparticles are semiconductor nanoparticles

Claim 9 (withdrawn).   A method according to Claim 8 wherein the semiconductor nanoparticles are comprised of materials selected from the group consisting of cadmium selenide, cadmium sulfide, silver sulfide, cadmium sulfide, zinc sulfide, zinc selenide, lead sulfide, gallium arsenide, silicon, tin oxide, iron oxide and indium phosphide.

Claim 10 (Original). A method according to Claim 1 wherein the nanoparticles are about 100 nm or less in diameter

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Claim 11 (Original). A method according to Claim 1 wherein the nanoparticles are about 40 nm or less in diameter.

Claim 12 (Original). A method according to Claim 1 wherein the electrolyte is selected from the group consisting of sodium chloride, sodium phosphate, sodium citrate, sodium acetate, magnesium sulfate, calcium chloride, ammonium chloride, and ammonium sulfate.

Claim 13 (Original). A method according to Claim 12 wherein the electrolyte is sodium chloride.

Claim 14 (Original). A method according to Claim 1 wherein the substantially water-miscible organic solvent is selected from the group consisting of methanol, ethanol, isopropanol, dimethyl sulfoxide, tetrahydrofuran, dimethylformamide, dioxane and acetone.

Claim 15 (Original). A method according to Claim 14 wherein the substantially water-miscible organic solvent is methanol or ethanol.

Claim 16 (Original). A method according to Claim 1 wherein the substantially water-miscible organic solvent is a mixture of organic solvents.

Claim 17 (Original). A method according to Claim 16 wherein the mixture of organic solvents are combinations selected from the group consisting of ethyl acetate and methanol; ethyl acetate and ethanol; ethyl acetate and isopropanol; ethyl acetate and acetone; ethyl acetate, dimethylformamide, and dimethyl sulfoxide; and ethyl acetate, tetrahydrofuran, and dioxane.

Claim 18 (Original). A method according to Claim 1 wherein the nanoparticles are collected by centrifugation or filtration.

Claim 19 (withdrawn).   A method for determining the average size of stabilized, charged, water-soluble nanoparticles comprising:

   a)   providing a population of charged, water-soluble nanoparticles of unknown size in an aqueous solution in combination with a densifying agent;

   b)   providing a solution of stabilized, charged, water-soluble nanoparticle size standards of known size in combination with a densifying agent;

   c)   loading the nanoparticles of (a) and (b) on to an electrophoresis gel;

   d)   separating the loaded nanoparticles of (c) by applying an electric field to the gel; and

   e)   determining the average size of the unknown nanoparticles by comparing their mobility in the gel with the mobility of the nanoparticles size standards.

Claim 20 (withdrawn).   A method according to Claim 19 wherein the densifying agent is selected from the group consisting of glycerol, sucrose and Ficoll®.

Claim 21 (withdrawn).   A method according to Claim 19 wherein the gel is comprised of agarose or polyacrylamide.

Claim 22 (withdrawn).   A method according to Claim 19 wherein the gel is an agarose gel having an agarose concentration of about 0.6 % to about 7 %.

Claim 23 (withdrawn).   A method according to Claim 22 wherein the gel is a 4% agarose gel.

Claim 24 (withdrawn).   A method according to Claim 19 wherein the gel is a polyacrylamide gel having an acrylamide concentration of about 3.5% to about 21%.

Claim 25 (withdrawn).   A method according to Claim 19 wherein the nanoparticles are metal nanoparticles.

Claim 26 (withdrawn).   A method according to Claim 19 wherein the nanoparticles are about 100 nm or less in diameter.

Claim 27 (withdrawn).   A method for fractionating stabilized, charged, water-soluble nanoparticles of a specified size comprising:

    (a)   fractionating the stabilized, charged, water-soluble nanoparticles according to the method of Claim 1; and

    (b)   determining the average particle size of the fractions according to the method of Claim 19.

Claim 28 (withdrawn).   A method for fractionating stabilized, charged, water-soluble nanoparticles of a specified size comprising:

    (a)   fractionating the stabilized, charged water-soluble nanoparticles according to the method of Claim 1; and

    (b)   determining the average particle size of the fractions using transmission electron microscopy.

29.   A population of nanoparticles fractionated by the method of Claim 1.

Claim 30 (withdrawn).   A population of nanoparticles having a narrow size distribution.